

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

ID SECURITY SYSTEMS CANADA,	:	CIVIL ACTION
INC.,	:	NO. 99-577
	:	
Plaintiff,	:	
	:	
v.	:	
	:	
CHECKPOINT SYSTEMS, INC.	:	
	:	
Defendant.	:	

M E M O R A N D U M

EDUARDO C. ROBRENO, J.

May 21, 2002

The plaintiff has filed a motion to exclude the testimony of Bruce Eisenstein, Ph.D. Dr. Eisenstein has produced a report to refute certain claims of performance concerning ID Security's Laserfuse tag made at trial. Dr. Eisenstein opines that ID Security's radio frequency ("RF") tag, the Laserfuse tag, is an inferior product compared to the RF tag produced by Checkpoint. ID Security seeks to preclude the testimony of Dr. Eisenstein on the grounds that he is not qualified as an expert in electronic article surveillance ("EAS") and that his opinion is based upon an unreliable methodology. For the reasons set forth below, the court finds that Dr. Eisenstein is qualified to testify and that his opinion is based upon a reliable methodology.

I.

ID Security contends that in 1997, it was on the cusp of introducing a "next generation" of RF tag, called Laserfuse. ID Security argues that its plans to introduce the tags were interfered with by Checkpoint, causing a four-year delay in the development of these tags. Throughout discovery, ID Security President Peter Murdoch indicated that ID Security had not yet produced the Laserfuse tag for sale. At the court's hearing on March 8, 2002, pursuant to Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993), ID Security indicated that the tags were now in production. On April 23, 2002, upon request by Checkpoint, the court ordered ID Security to produce 24 samples of the Laserfuse tags for inspection by Checkpoint. Checkpoint provided its electrical engineering expert, Dr. Bruce Eisenstein, with 18 Laserfuse tags and with instructions to determine how the Laserfuse tag performed and to compare their performance to Checkpoint's RF tag. On May 6, 2002, Checkpoint produced the expert report of Dr. Eisenstein. ID Security then took Dr. Eisenstein's deposition on May 8, 2002. On May 16, 2002, the court held a Daubert hearing and afforded the parties an opportunity to present evidence. Both parties rested on their written filings, the expert's report, the notes of the deposition

transcript, and on argument of counsel.¹

During the course of trial in this case, ID Security President Peter Murdoch provided multiple demonstrations of the functionality of the Laserfuse tag. First, Murdoch conducted a live demonstration of the Laserfuse's compatibility with Checkpoint's equipment. Mr. Murdoch passed an active Laserfuse tag through RF antenna sensors, which caused the alarm to sound. Murdoch then deactivated a Laserfuse tag using Checkpoint's deactivation equipment and passed it through the antennas without causing an alarm. ID Security also played a videotape of Mr. Murdoch walking into several stores on Chestnut Street in Philadelphia with a Laserfuse tag, which caused the stores' Checkpoint sensors to alarm. ID Security contends that the demonstration was a real field test of how the Laserfuse tag interacts with Checkpoint's system in an actual commercial setting.

Now, Checkpoint seeks to call Dr. Eisenstein to testify that his tests of the Laserfuse product suggest that the Laserfuse tag does not perform as ID Security claims and, in fact, performs less reliably than the Checkpoint tag. ID Security objects to his testimony on the grounds that Dr. Eisenstein is not qualified to testify as an expert nor is his

¹ Lee A. Rosengard, Esq., counsel for Checkpoint, was permitted without objection to offer Dr. Eisenstein's testimony by way of proffer at the hearing.

methodology reliable.

II.

ID Security notes that although the qualification standard shall be liberally interpreted, see In re Paoli R.R. PCB Litig., 35 F.3d 717, 741 (3d Cir. 1994), a court abuses its discretion where it permits an expert to testify to matters outside his knowledge, skill, experience, training or education. See Aloe Coal Co. v. Clark Equip. Co., 816 F.2d 110, 114 (3d Cir. 1987). ID Security concedes that Dr. Eisenstein has general engineering knowledge, but argues that such knowledge is not sufficient to opine on the engineering of EAS systems and Laserfuse tags. See Fedor v. Freightliner, Inc., 193 F. Supp.2d 820, 829-30 (E.D. Pa. 2002) (Robreno, J.).

The court finds that Dr. Eisenstein meets the qualifications prong of Daubert in this instance. Dr. Eisenstein, a former president of the Institute of Electrical and Electronics Engineers and former department head of the Electrical and Computer Engineering Department at Drexel University, has studied, taught and practiced electrical engineering for over forty years. The testimony at issue revolves around the application of circuitry and signal electrical engineering principles.² ID Security has not

² It is the application of these electrical engineering principles that are relevant to the issue of the functionality and performance of the Laserfuse tags.

demonstrated how these general electrical engineering principles are applied differently in the context of EAS technology. Thus, although he is not an expert in EAS systems specifically, his knowledge and expertise of circuitry and signal engineering provide the basis for his opinion and thus his testimony will assist the finder of fact in evaluating the functionality and performance of the Laserfuse tag. Dr. Eisenstein is thus qualified to render an opinion in this case.

III.

ID Security also challenges Dr. Eisenstein's methodology. To assess an expert's methodology under Rule 702, a district court should consider, where appropriate, the following factors: "(1) whether a method consists of a testable hypothesis; (2) whether the method has been subject to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based upon the methodology; and (8) the non-judicial uses to which the method has been put." Oddi v. Ford Motor Co., 234 F.3d 136, 145 (3d Cir. 2000).

The court must first examine the methodology used by Dr. Eisenstein. Dr. Eisenstein approached his research with the

goal of determining the quality of the Laserfuse tag compared to the Checkpoint tag with respect to the tags' ability to deactivate and the likelihood of reactivation. To reach such a determination, Dr. Eisenstein tested 18 Laserfuse tags and 18 Checkpoint tags by examining whether the tag was active by using a hand-held detector then walking through the portal, or antenna sensors, three times in each direction, for a total of six times. Dr. Eisenstein then recorded how many times the tags failed to set off the alarm. Following the test, Dr. Eisenstein tested the center frequency, bandwidth and peak-to-peak voltage by using standard electrical engineering equipment. Dr. Eisenstein then calculated the Q value by dividing the center frequency by the peak-to-peak bandwidth.

Dr. Eisenstein then tested five Laserfuse tags and five Checkpoint tags for deactivation. Dr. Eisenstein fastened the tag to a hand-held detector and placed the tag 18 inches above the deactivation pad. He then slowly lowered the tag until the hand-held detector alarm stopped, indicating that the tag was deactivated. He tested the tag's center frequency, bandwidth and peak-to-peak voltage. Because three of the ID Security tags that had deactivated according to the hand-held detector still exhibited a center frequency that was in the detection system's range, Dr. Eisenstein deactivated these three tags by placing

them directly on the deactivation pad.³ Dr. Eisenstein then tested the tags at 1.5 hours, 5.5 hours, 24 hours and 48 hours after the initial deactivation in order to determine whether the tags reactivated over time.⁴

ID Security first argues that Dr. Eisenstein, who has no experience in the EAS industry, invented the protocol for testing RF tags rather than following the industry standard methods for testing the performance of tags. Specifically, ID Security notes that Dr. Eisenstein completely ignored the industry's standard method for testing reactivation rates. ID Security notes that the protocol developed by Checkpoint to test whether a tag reactivates is to place deactivated tags into a paint mixer along with ball bearings and to turn the machine on, so as to simulate the effect of a tag being jostled in a shopping bag with other items. ID Security also contests the method by which Dr. Eisenstein deactivated the tags, noting that the standard height that Checkpoint uses to deactivate its tags is four and one half inches over a deactivation pad. ID Security notes that the commercial practice for deactivating tags is

³ All five of Checkpoint's tags deactivated on the first try, as did the two other Laserfuse tags.

⁴ At some point between the test at 5.5 hours after the initial test and 24 hours after the initial test, Dr. Eisenstein conducted a field test, taking all 36 tags to two stores that use Checkpoint's RF systems on the 1600 block of Chestnut Street in Philadelphia.

actually two inches. ID Security, as a result, argues that Dr. Eisenstein erred by starting the tag 18 inches over the deactivation pad.

ID Security's contention that Dr. Eisenstein erred by adopting a new and previously untested methodology fails to consider ID Security's own arguments concerning the Laserfuse tag. ID Security offers the Laserfuse tag as a new and superior tag to Checkpoint's RF label because the Laserfuse tag deactivates not by short circuiting, but by changing its frequency. Because the Laserfuse tag functions differently than regular RF tags, the standard methodology used by Checkpoint for testing the tags is not appropriate. The paint mixing test is designed to test whether the wires in the tag that short circuit will separate as a result of jostling or bumping with other items and thus reactivate the tags by separating. Because the Laserfuse tag does not short circuit, it is not appropriate to test the tags with the paint mixing test. It was thus important for Dr. Eisenstein to formulate a method that would effectively measure the strength and reliability of the Laserfuse tag. In doing so, he tested the tags over a series of intervals, at 1.5 hours, 5.5 hours, 24 hours and 48 hours after the deactivation. He developed this methodology in consultation with one of Checkpoint's senior research development engineers, Gary Mazoki, an experienced industry engineer, who provided guidance on what

and how to test the tags.

ID Security argues that Dr. Eisenstein started the deactivation process too high by attempting to deactivate the tags first at 18 inches and then slowly lowering the tags over the deactivation pad. This argument ignores the fact that Dr. Eisenstein did not simply leave the tag at 18 inches and, if the tag did not deactivate, determine that the tag had malfunctioned. Rather, he started the test at 18 inches above the deactivation pad and then lowered the tag until a hand-held detector ceased to sound its alarm. Furthermore, Dr. Eisenstein deactivated several of the ID Security tags by placing them directly on the deactivation pad.

Finally, ID Security contends that Dr. Eisenstein's data and conclusions are fundamentally flawed because there are no assurances that the equipment that Dr. Eisenstein used was working properly and within its specifications. ID Security notes that the equipment was installed by Dr. Eisenstein's assistant, a electronics and computer technician, who received no instructions or manual for putting the equipment together.⁵

⁵Dr. Eisenstein testified at his deposition:

Q: Do you know how far apart the Us were, as I called them?

A: I didn't measure that.

Q: Do you have an estimate?

A: Yeah, I'd say maybe 3 feet, perhaps a little more, perhaps a little less.

Q: Were you given any manual for this?

The court concludes that the absence of verification of the accuracy of the equipment was cured by the field test that Dr. Eisenstein conducted on the tags. Dr. Eisenstein testified that after the 5.5 hours test but before the 24 hours test he went to two stores on Chestnut Street in Philadelphia, a Payless Shoe Store and a Rite Aid Pharmacy, and tested all 36 tags.⁶ The results confirmed his earlier tests:

Q: And are the results of those - is that field test reflected in this report?

A: I think I mention it in there. All of the tags that were live tripped the detector. I didn't bother putting a table in there because they all tripped the detector.

Q: All 18 tags or all 36 tags? Sorry.

A: The five of each that were deactivated did, as I indicate in Table 4 for the ID tags at the time that you see in that middle column. The five Checkpoint tags that were deactivated did not trip it and I didn't bother putting a tag in there, and the remaining 13 tags that were not deactivated of each company tripped

A: No.

Q: Where you given any kind of specifications for it?

A: No.

Q: Were you given any instructions on how to adjust it?

A: No.

Q: Did you know whether it was working properly?

A: Only to the extent that it seemed to detect the live tags and not detect the tags that were deactivated.

Q: Do you know whether it was performing within the specifications set by Checkpoint?

A: No.

Eisenstein Dep., 5/8/02, at 28-29.

⁶ Both of these stores were also the locations for a field test performed by Mr. Murdoch. Mr. Murdoch took his Laserfuse tag to several stores along Chestnut Street and videotaped himself walking through the Checkpoint sensors and setting off the alarm. The videotape was played for the jury.

the detector in the field test so I didn't bother putting a table in there because they did it.

Eisenstein Dep., 5/8/02, at 76-77. In other words, the results achieved by Dr. Eisenstein in the laboratory were confirmed by the field tests on the very equipment in the two stores on Chestnut Street where Mr. Murdoch had conducted his own field tests. In Dr. Eisenstein's field tests, just as in the laboratory tests, those tags that were deactivated did not set off the alarm in the stores while those tags that were live did.⁷

The court concludes that the opinion of Dr. Eisenstein is based on a testable hypothesis, was conducted in accordance with generally accepted electrical engineering principles of circuitry and signaling, and was corroborated by a limited field test by a well qualified expert. Although, because the product is new and the circumstances of the case did not permit peer review or the application of an industry standard, the court finds that, on balance, the opinion offered is reliable.

For the reasons stated above, the court thus finds that Dr. Eisenstein's methodology is sufficiently reliable to permit the introduction of his testimony at trial.⁸

⁷ Having relied upon the Checkpoint equipment used at the two Chestnut Street stores to conduct its own field test, ID Security cannot now complain that there is no proof that the Checkpoint equipment in the stores was not properly functioning or not to specification.

⁸ The plaintiff did not raise any argument concerning the "fit" requirement of the Daubert analysis.

An appropriate order follows.

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	:	
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ORDER

AND NOW, this **21st** day of **May, 2002**, upon consideration of plaintiff's motions to exclude the testimony of Bruce Eisenstein, Ph.D. (doc. nos. 178 and 186) and for the reasons set forth in the court's memorandum dated May 21, 2002, it is hereby **ORDERED** that the motions (doc. nos. 178 and 186) are **DENIED**.

AND IT IS SO ORDERED.

EDUARDO C. ROBRENO, J.